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CONFIRMATION NO. FIRST NAMED INVENTOR ATTORNEY DOCKET NO. FILING DATE APPLICATION NO. 6856 07/22/2003 Alan W. Hayman GP-301053 10/624,172 EXAMINER 07/22/2004 7590 DOLINAR, ANDREW M CHRISTOPHER DEVRIES General Motors Corporation PAPER NUMBER ART UNIT

Legal Staff, Mail Code 482-C23-B21 P.O. Box 300 Detroit, MI 48265-3000

3747 DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.  - If IN Openido fror reply specified above is less than thirty (30) days, a reply within the satutory minimum of thirty (30) days will be considered timely.  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).  Status  1) Responsive to communication(s) filed on  2a) This action is FINAL. 2b) This action is non-final.  3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) Claim(s) 1-16 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5) Claim(s) is/are allowed.  6) Claim(s) is/are objected to.  8) Claim(s) is/are objected to.  8) Claim(s) are subject to restriction and/or election requirement.		Application No.	Applicant(s)		
Period for Repty  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE of THIS COMMUNICATION.  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  If the period for reply specified is not be it is a transmission of the period for reply specified in the fee promission of 37 CFR 1 180p.) In the event, however, may a reply be teinely filled.  If the period for reply specified shore is less than thirty (50) days, a reply writher the attendor printing in 60 this communication.  If the period for reply specified shore is less than thirty (50) days, a reply writher the attendor printing in 60 this (100 cm) is second to the period for reply specified reply specified to be became ABMONDED (3 bits U.S. 2 133).  Any reply vaccious by the Cities lister than there mention after the mailing date of this communication, even disney friend the major gain and the specified to the second ABMONDED (3 bits U.S. 2 133).  Any reply vaccious by the Cities lister than there mention after the mailing date of this communication, even disney filed, may reduce any centre part that a problem is printing than the specified to the second ABMONDED (3 bits U.S. 2 133).  Any reply vaccious by the Cities lister than there mention after the mailing date of this communication, even disney filed, may reduce any centre and the specified to a second and communication is communication.  Application of Claims  4) Claim(s)		10/624,172	HAYMAN, ALAN W.	V	
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THE MAILING DATE OF THIS COMMUNICATION.  Extractions of time may be available under the procisions of 3 CFR1 1.36(a). In or event, however, may a reply be timely filed after SIX (6) JUCKIT-S from the mailing date of this communication.  A policial of the process of the communication of 3 CFR1 1.36(a). In or event, however, may a reply be timely filed after SIX (6) JUCKIT-S from the mailing date of this communication.  Failure to reply within the set or extended period for reply will, by stabline, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Dictic Bodow, the manimal after the mailing date of this communication.  Failure to reply within the set or extended period for reply will, by stabline, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Dictic Bodow, the manimal set the mailing date of this communication.  Failure to reply within the set or extended period for reply will, by stabline, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the time that the maining date of this communication.  Failure to reply within the set or extended period for reply will, by stabline, cause the application is one-final.  3) This action is FINAL.  2b) This action is FINAL.  2b) This action is non-final.  3) This action is FINAL.  2b) This action is non-final.  3) This action is replaced or action of replaced and accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) Claim(s)	The MAILING DATE of this communicate Period for Reply	tion appears on the cover sheet w	ith the correspondence addre	ess	
1) Responsive to communication(s) filed on	THE MAILING DATE OF THIS COMMUNICA  - Extensions of time may be available under the provisions of 3 after SIX (6) MONTHS from the mailing date of this communic  - If the period for reply specified above is less than thirty (30) de  - If NO period for reply is specified above, the maximum statuto  - Failure to reply within the set or extended period for reply will, Any reply received by the Office later than three months after	ATION. 7 CFR 1.136(a). In no event, however, may a reation. ays, a reply within the statutory minimum of thir hyp period will apply and will expire SIX (6) MON by statute, cause the application to become Al	reply be timely filed  ty (30) days will be considered timely.  ITHS from the mailing date of this comm  3ANDONED (35 U.S.C. § 133).	nunication.	
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	<ul> <li>2) Notice of Draftsperson's Patent Drawing Review (PTC</li> <li>3) Information Disclosure Statement(s) (PTO-1449 or PT</li> </ul>	D-948) Paper No	(s)/Mail Date Informal Patent Application (PTO-1	152)	

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## **DETAILED ACTION**

## Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 4, 5 and 10-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Marshall et al (US 6,637,394 B2). As shown in FIG. 4, a starting cycle (strokes A, B, C, D) wherein fuel is not supplied and the intake and exhaust valves are operated so as to inherently provide a wasted power stroke and a wasted compression stroke. See column 5, lines 1-18.

## Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al (US 6,637,394 B2) in view of the conventional four cylinder engine as set forth on page 4 of applicant's specification. Marshall et al discloses the claimed invention except for the opening of an exhaust valve of a second cylinder. As shown in FIG. 4, a starting cycle (strokes

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A, B, C, D) wherein fuel is not supplied and the intake and exhaust valves are operated so as to inherently provide a wasted power stroke and a wasted compression stroke. See column 5, lines 1-18. Applicant's specification teaches a conventional stroke pattern of a four cylinder four stroke engine, which is presumed to be prior art in the absence of evidence to the contrary. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the engine of Marshall et al as a four cylinder engine, as is admitted by applicant to be conventional, in order to apply the starting cycle of Marshall et al to a specific engine. The combination would inherently provide opening of an exhaust valve of a second cylinder as claimed.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al (US 6,637,394 B2) in view of the conventional four cylinder engine as set forth on page 4 of applicant's specification as applied to claims 1 and 3 above, and further in view of Jones (US 5,101,780). Jones teaches the use of solenoid engine valves (column 3, lines 12-15), which are operated independently of engine timing as defined by applicant. It would further have been obvious to one having ordinary skill in the art at the time the invention was made to modify the engine of Marshall et al by substituting solenoid engine valves, as taught by Jones, in order to simplify the valve actuating structure.

Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al (US 6,637,394 B2) in view of Jones (US 5,101,780). Marshall et al discloses the claimed invention as stated above except for valves operated independently of engine timing. Jones teaches the use of solenoid engine valves (column 3, lines 12-15), which are operated independently of engine timing as defined by applicant. It would have been obvious to one

Page 4

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having ordinary skill in the art at the time the invention was made modify the engine of Marshall

et al by substituting solenoid engine valves, as taught by Jones, in order to simplify the valve

actuating structure.

Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Andrew M. Dolinar whose telephone number is (703) 308-1948. The

examiner can normally be reached on Mon. - Thu. 7:45 - 6:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Henry Yuen can be reached on (703) 308-1946. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andrew M. Dolinar Primary Examiner

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AMD